P-TRIZ in the History of Business Processes

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Development of Business Process Modelling (BPM)

▶ 1990: Business Process Reengineering (BPR)
▶ 2000: Business Process Management Systems (BPMS)
▶ 2005: Business Process Innovation (P-TRIZ)
▶ 200?: Business Process Realisation (Transformation)

Each era of BPM has added new capabilities to the last.

BPMS systems enable process architects to readily deploy creative new process designs, sidestepping time and resource intensive implementation projects of the past that so denuded and distorted reengineering of its creative potential.

Now, P-TRIZ is an emerging method that builds on the shoulders of those giants.

What is Innovation?

Innovation is the process by which new commercial concepts – products, services, processes – are brought into being, in order to generate business. It requires uncontrollable creativity positioned side-by-side with disciplined business practice.

The challenge in innovation today is thinking about and managing this extremely broad set of interrelated activities as a unified process.

Tool Based BPMS

The developments since the 1990s have led to a very detailed understanding of how company-internal processes are to be structured and which areas are to be differentiated. Corresponding cross-industry frameworks have become established, such as the seven levels of APQC.

In the Third Wave of BPM, creative process design has been given a new path to execution in the form of **business process management (BPM) systems**. These are IT tools that bring work processes to life in the enterprise.

Yet BPM tools are no panacea. BPM deployment tools can only provide a fast track to results once the process has been re-designed. Re-designing any process beyond minor optimisation is still very much a creative human act.

Innovation as Process

Innovation as process re-design is itself a process that should be systematically planned, designed and implemented.

Smith: Those who model, re-design, and deploy significant new business processes in support of innovation also need a process. I call that process P-TRIZ. [...] The potential for a reliable and general-purpose innovation methodology that can be applied to processes has never been greater.

Innovation and Invention

Innovation is the end-to-end process by which improved, renewed, or replacement products, solutions, and services are delivered in practice, generating new "top line" business value.

It is now generally agreed that **innovation is distinct from creativity and invention**, and that it is an end-to-end process whose objective is the generation of value.

Making effective progress requires more than inspiration, it requires a method.

What does TRIZ offer?

A method for organising the innovation process. What does TRIZ offer?

▶ Development of useful-harmful *functional models* of processes

▶ Identification of *process-contradictions*: conflicting function points that link problem-solving knowledge to pain-points

▶ Generation of *(abstract) solution pathways* (BPR)

▶ Management of a "world-wide" solution knowledge for *process re-design patterns*

▶ Opening a path to *process "Ideality"*.

An Abstract Example
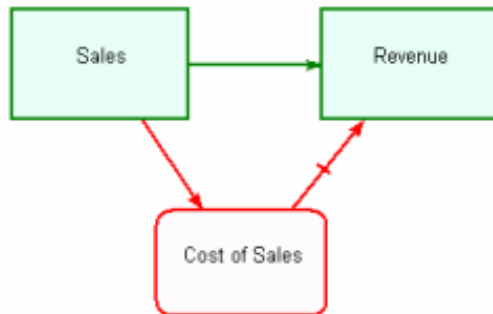
Figure 4 – P-TRIZ model of the Sales Process

The Ideal Process

If business leaders are to have full confidence in BPM methods and tools, process *innovation* must guarantee a progression towards *more ideal processes*. This is what P-TRIZ seeks to achieve.

If your competitors offer more ideal processes, your company is at a disadvantage. All companies should be on the look out for more ideal processes: That is what *process innovation* means.

The Ideal Process

To get a measure of ideality, TRIZ proposes the ratio of a system's useful functions to its harmful functions.

$$\text{Ideality} = \frac{\text{Sum of useful functions}}{\text{Sum of harmful functions}} \qquad \text{(Smith' definition)}$$

$$\text{Ideality} = \frac{\left(\begin{array}{c}\text{Revenue from}\\ \text{useful functions}\end{array}\right) - \left(\begin{array}{c}\text{Losses from}\\ \text{harmful functions}\end{array}\right)}{\text{Costs}}$$

(Souchkov's definition)

Useful and Harmful Functions

For processes, *functions* (useful or harmful) are their outputs, activities, actions, steps, resources, tasks, or any other factors inherent to the execution of the process.

The useful functions can be classified as follows:

► *Primary (Main) useful function* – the purpose for which the process was designed.

► *Secondary functions* – other useful functions that the process provides in addition to the primary useful function.

► *Auxiliary functions* – functions that support or contribute to the execution of the primary function, such as corrective functions, control functions, compliance functions, etc.

Processes Vanish – the Ideal Machine

Given the definition of ideality as the ratio between a system's useful functions and its harmful functions, we can imagine the most ideal system of all.

It would be a system in which there are no harmful functions at all – in other words, it would cost nothing to design, implement, or maintain, use no energy, take up no space, would emit no harmful byproducts, and so on.

Stated another way: **An ideal system is one whose functions are performed without the system existing; no "system" at all, just all the benefits.**

Processes Vanish – the Ideal Machine

Taking this TRIZ principle and applying it processes, we have this: The objective of reengineering is to **get rid of processes altogether!**

We never actually need a process; what we really need is a *function*. While this statement may sound strange, it is undoubtedly true. The objective of reengineering is to turn processes into functions, and to remove activity, leaving benefit.

Systemic Development

As process engineers, we work to reveal, and then eradicate, the harmful functions. We convert "As Is" process designs toward "To Be" process designs by transforming the cause-effect links between useful and harmful elements, and by finding solutions (new functions) that convert harm into useful output.

We also limit or counter-act the effect of harmful functions by exploiting many kinds of available resources within or surrounding the domain of the process and its environment – including relationships, time, finance, and many other types of resources.

Resource analysis plays a great role in P-TRIZ.

Why Using P-TRIZ (i.e. Business TRIZ)?

P-TRIZ can be considered an application of modern TRIZ. P-TRIZ will add to the body of worldwide TRIZ knowledge, including

▶ *Specific vocabularies* for a consistent modelling of processes using TRIZ.

▶ *TRIZ solution patterns* that apply specifically to processes.

▶ *Bindings* between TRIZ modeling constructs and accepted process modeling in languages and notations.

▶ *Evolutionary trends* observed as processes tend towards Ideality.

▶ Workshop and project *practices* that facilitate the practical and efficient use of TRIZ in a "commerce time" reengineering context.

▶ A small number of *extensions to the standard modern TRIZ notation*. The objective is to enrich TRIZ formulation in support of Business Process and Enterprise Architecture Innovation.